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ABSTRACT

Semiotics, the study of signs of all kinds, can be subdivided into (1) semantics, dealing with the meanings of signs and systems of signs; (2) pragmatics, dealing with inferential meaning; and (3) syntactics, dealing with the structure and systems of signs. As such, semiotics provides a useful framework for conceptualizing curriculum. Such a model can be thought of as psychological, referring to the production of messages by individuals; or it can be viewed as a prescriptive prototype for generating communication in a classroom. The model begins with an "experiential store" within each human being--a store of concepts, affects, and experiences that is indeterminate, undifferentiated, and unsymbolized. These experiences can be encoded by alternative signs or sign systems using media alternatives labeled as linguistic (oral and written), gestural (e.g., body language, mime, dance), pictorial (e.g., painting, photography), and musical (instrumental or vocal). Using the model, a student's film interpretation of a work by John Steinbeck might involve linguistic skills (discussion, scripting), a strong sense of narrative, visual imagination and pictorial production (story board), constructive skills (building a set), knowledge about and physical manipulation of media hardware, and the manual dexterity and conceptual skills required in film editing. Such a semiotic model embraces cognitive, aesthetic, and psychomotor skills. (A semiotics-based curriculum model is included.) (HOD)

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READING IN A SEMIOTICS-BASED CURRICULUM

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I was reading Halliday's (1978) Language as a Social Semiotic when a colleague looked over my shoulder and said, "I make it a point never to read a book if I don't understand the title." Impishly, I considered recommending Richard Brautigan's Trout Fishing in America or Joseph Wambaugh's The Choirboys, but the truth is I couldn't give him a useful definition of semiotics. When I started talking about Ferdinand de Saussure, Charles Sanders Peirce, signification, and interpretants, his eyes glazed over and he soon remembered that he was late for a meeting. I recognized well the symptoms of utter boredom, because I spent many years trying to explain gerunds and absolute phrases to high school students.

But surely, the matter of plain-English definitions is important. So I will with trepidation attempt a home-brewed definition of semiotics here, borrowing freely from numerous sources. The sources, I assure you, are not easy to work with. A leading contemporary semiotic theorist, Umberto Eco (1976) acknowledges in A Theory of Semiotics that the field is "in a state of disorder." He lists the following as areas that deal with semiotic concerns: Zoosemiotics, olfactory signs, tactile communication, taste codes, paralinguistics, medical semiotics, kinesics, proxemics, music, special languages like math and chemistry, written languages, natural languages, visual communications, systems of objects (like architecture), plot structure (e.g., myth study and genre analysis), text theory, cultural codes (like etiquette, chivalry, and theology), aesthetic texts, mass communications, rhetoric, and others (pp. 9-14). Later he says that semiotics is "a substitute for cultural anthropology" (p. 27). Small wonder that

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Humanities Report (Herbert, 1981) noted that semiotics has been called "imperialistic discipline." To which literary theorist Robert Scholes replied that "semioticians. . . [do] take texts that are privileged by philosophy departments or psychology or arts departments and incorporate them. So there is a sense that these people are trying to do everything. But that is the inevitable result of any disciplinary rearrangement" (p. 8). Yet an article in Academe (Privateer, 1981) claims that semiotics is not a discipline, but a "method of analysis."

The confusion multiplies: Eco describes communications as a discipline with "semiotic relevance." Hawkes (1977), on the other hand, holds that semiotics is within the province of communications and that "the boundaries of semiotics (if it has any) are coterminous with those of structuralism"--and structuralism, of course, is "a method of analysis linking the fields of linguistics, anthropology and semiotics" (p. 124).

I don't propose to sort all of this out with a few bold oversimplifications. In the first place, I can't say I've understood the complexities well enough to sort them all out. In the second place, I have no reason to believe that others would accept my naive solutions to titanic intellectual problems. The solutions, if they are to come, will evolve over the next decade or two. But I will try to bend and shape classical ideas of semiotics enough to communicate something that is useful in curriculum development, because I believe that semiotics is an exciting and promising field with much to offer to working educators.

So I invite you to bear with me through a few fundamental definitions that will lead to comments on new ways of looking at curriculum. I'll attempt a clear-cut definition of semiotics first, appending to that definition other concepts I have found useful in thinking about curriculum. Then I'll speak as a curriculum

specialist and practitioner, making use of the definitions and providing models for practical application of semiotic theory. In the process I hope to bring into perspective many ideas that are important to us all--lively classroom instruction, integrated curricula, legitimate uses of nonprint media and the arts in the classroom, and yes, even basic skills.

Semiotics is the study of signs of all kinds. A sign is something that stands for something else. A STOP sign is a visual and linguistic sign representing, obviously, our culture's directive to apply the brakes. Any spoken or written word is a linguistic sign--categorized as a symbol because the relationship between the word and what it stands for is usually arbitrary. A painting of a waterfall and a statue of Beethoven are signs, too, but they aren't arbitrary. They resemble something else, and they are referred to as iconic signs. Another kind of sign is called an index--like a pain in the chest, which can be a sign of heartburn, anxiety, unrequited love, or some other ailment.

Signs can be organized into systems of objects and behavior. The way you set your table is part of a system of cultural signs. So are your clothes, and the things you attach to your auto bumper, dashboard, and rearview mirror. And if you appear to be avoiding things like designer jeans, bumper stickers, or T-shirts with amusing pictures and slogans, the absence of these things might also constitute signing behavior. All of the arts and the academic disciplines are highly complex sign systems, being formulations and configurations of symbols and/or icons.

So far, so good. The next step, a little trickier, is to recognize that ideas are signs. As soon as raw sensory data are processed and "cognized," the resulting mental representations are signs. These ideas, thoughts, concepts,

meanings--call them what you will--are never a direct grasping of a "referent" in the outside world. Rather, our ideas are determined by the repertoire of available names and categories that our culture provides.

This is not to say that semiotics necessarily denies the existence of external reality. In the semiotic viewpoint, a given culture provides particular ways of coding perceptions, and the culture's way of defining entities will determine the furniture of our mental life. (Eco, 1976, pp. 24, 38, 66-68, 124-129; Bunn, pp. 21-38). To resurrect an old example, our mental representations for snow are determined by a small number of labels provided by our culture, whereas Eskimo culture defines snow in much more refined ways and provides dozens of words for talking about the stuff.

Semiotics is subdivided into three areas: semantics, pragmatics, and syntactics. Semantics is the sub-area that deals with the meanings of signs and systems of signs. Stated another way, semantics attempts to specify the cultural definitions of signs and sign combinations. Of course, cultural definitions and formulations are often ambiguous and even contradictory. The semanticist acknowledges this, sorting out what is clear and unclear, compatible and contradictory, in the array of labels, propositions and nonverbal signs provided by the culture. Hence, the linguistic semanticist might analyze ordinary language (Austin, 1962), or perhaps develop graphs (Eco, 1979, pp. 225-226) or compositional trees to describe meanings of a word like "bachelor"--which can refer to an unmarried man or a seal, among other things (Katz and Fodor, p.190). And the student of paralinguistic signs will differentiate between the vertical nodding of the head in America, where the gesture means "yes," and the same gesture in Eskimo cultures, where it means "no."

Pragmatics can be broadly defined as inferential meaning. "Inference" here is a complex of low-keyed interactions--a sparring contest of sorts--among human beings in various social settings or between a reader and a text. The source of inference might be subtle culturally defined rules of interaction, as when a teacher's statement "I hear a lot of talking" is understood by students to be a demand for silence; or the source might be a particular social context, as when a menacing gesture--fist clenched, arm raised--is understood to be mere horseplay among friends who collide on the dance floor.

Pragmatics is a major concern today in reading and literary interpretation. Iser's The Act of Reading (1978) and Eco's The Role of the Reader (1979) depict reading--especially, reading of imaginative writing--as a joint venture in which the reader cooperates with the author in a meaning-making process. The same essential stance has been taken by reading specialists like Peter Spencer (1970), Frank Smith (1973), and Kenneth Goodman (1967). Goodman, for example, describes reading as a "psycholinguistic guessing game" in which the experiences of the reader interact with the printed text. The Center for Reading at the University of Illinois has done research in pragmatics that goes well beyond the semantics of reading--i.e., beyond reading as a mode of message transmission--and beyond reading as inference in the narrow sense.

Here are some examples of pragmatic questions about reading: When students read simplified texts, do they suffer from the lack of connectives that reveal relationships in more complex texts? How, and at what ages, do children develop schemata for reading different kinds of stories predictively? What kinds of metaphorical expression can be processed by children at different age levels?

The third sub-area, syntactics, deals with the structure of signs and systems of signs. Reading and language arts teachers are familiar with linguistic syntactics--phonology, morphology, and syntax. In semiotics, the "syntax" of nonlinguistic sign systems is also studied. In music, the syntax of a Bach fugue resembles that of a traditional jazz band performance more than that of, say, a Beethoven symphony. The syntax of a pointillist painting is radically different from that of traditional or cubist painting.

Numerous educators and aesthetic theorists (e.g., N. Goodman, 1968; Gardner, et al., 1974; Gombrick, 1972; Arnheim, 1974; Broudy, 1977) have done syntactic analyses, comparing and contrasting structural elements and creative processes across sign systems. And of course, artists have long been fascinated by syntactic relationships among the arts. Poe wanted his poems to have the same effect as instrumental music, and he very nearly succeeded in "The Bells." Gertrude Stein tried to write short stories that unfold to our perceptions as a painting does. (She didn't succeed, but her failures are among the most interesting in American literature.) Concrete poetry is inherently multisyntactic, since the words are arranged to form some sort of icon on the page. In writing Of Mice and Men, Steinbeck tried to create a novelette as close to a stage drama as possible. Innumerable composers have written operas and musicals based on drama and fiction; set famous poems to music; and composed programmatic pieces based on paintings and events.

Syntactics is the focus of two concepts from my research (Suhor, 1981, pp. 55-59) relating directly to language arts curriculum--medium-specific analysis and transmediation. Medium-specific analysis refers to syntactic analysis that makes use of appropriate analytical tools. Historically, teachers trained in literary study have not taken a medium-specific approach to nonprint media. Rather, they have used the familiar tools and concepts of literary analysis--

plot, character, setting, symbol, and the like--when dealing with primarily visual media like movies and television. This syntactic shortsightedness has significant cognitive consequences. Students are denied the opportunity to expand both their observational powers and their repertoire of analytical categories. The study of film, for example, entails a rich array of analytical tools for understanding nonlinguistic structures. Camera angles, montages, shot composition, wide angle and telescopic lenses, dissolves, panning, and dollying are among the medium-specific aspects of film study. When used skillfully, of course, they interrelate closely with the semantics of a given film, just as the syntax of good writing shapes the meanings of sentences and larger units of discourse. My study of language arts educators' articles on nonprint media, 1961-1978, showed that more than half of the authors failed to use medium-specific analysis. Stated bluntly, these writers did not seem to know what they were talking about.

The second syntactic concept, transmediation, relates to the student's translation of content from one sign system into another. Examples of transmediation include writing based on pictures, students' retelling of stories they have read, collage book reviews, and any written analysis of a nonprint product. A valuable refinement of the transmediation idea was articulated in articles by Cameron and Plattor (1973) and Dauterman and Stahl (1971), who pointed out that translations from one medium to another can be literal or imaginative. Literal transmediation is involved in, say, making a raft like the one described in Huckleberry Finn; writing a paraphrase of a poem read in class; making a slide show to illustrate a short story; or doing a mime that parallels the action in a narrative poem. Imaginative transmediation--judged to be more valuable by the writers cited--is involved in a collage based on a book; a critical review of a film; a role-playing exercise based on the theme of a story; or a free writing exercise in response to an instrumental music recording.

Imaginative transmediation calls to mind the intersyntactic interests of artists like Poe, Steinbeck, and Gertrude Stein. It also relates to various studies and commentaries on right and left brain learning. Samples (1976), Cromer (1975), and others have written that education in America has neglected right brain, intuitive functions in favor of left brain, cognitive functions. Transmediation usually calls upon both right and left hemispheres. As Wolfe and Reising (1978) stated in an English Journal article, students in language arts classes can be encouraged to "shift repeatedly between two different kinds of brain functioning, . . . [and] engage both brains in a balanced way" (pp. 3-33). Such has been the message of aesthetic education, as in Broudy's (1977) statement that "manipulation of material in the various media" provides important training in "image-making and image-perceiving" and promotes the child's growth in unique ways.

Finally, I will use the term "media" much as Broudy did in the last quote. "Medium" will refer to any instrument or mode, natural or artificial, that can shape human communication. The spoken word is a medium; so is an oil painting, a symphony, a television production, and a computer--although having said that, I'll need to do considerable sorting out later on.

I'll try now to show how the definitions and specialized terminologies of semiotics relate to curriculum, and how they can be embedded in specific instructional activities. My main claim--that semiotics provides a useful framework for conceptualizing curriculum--is illustrated by the general model. (See Figure 1.) The model can be thought of as psychological, referring to the production of messages by individuals; or it can be viewed as a prescriptive prototype for generating communication in a classroom. I'll emphasize the former idea in my exploration of the general model and the latter in the three illustrative models that follow.

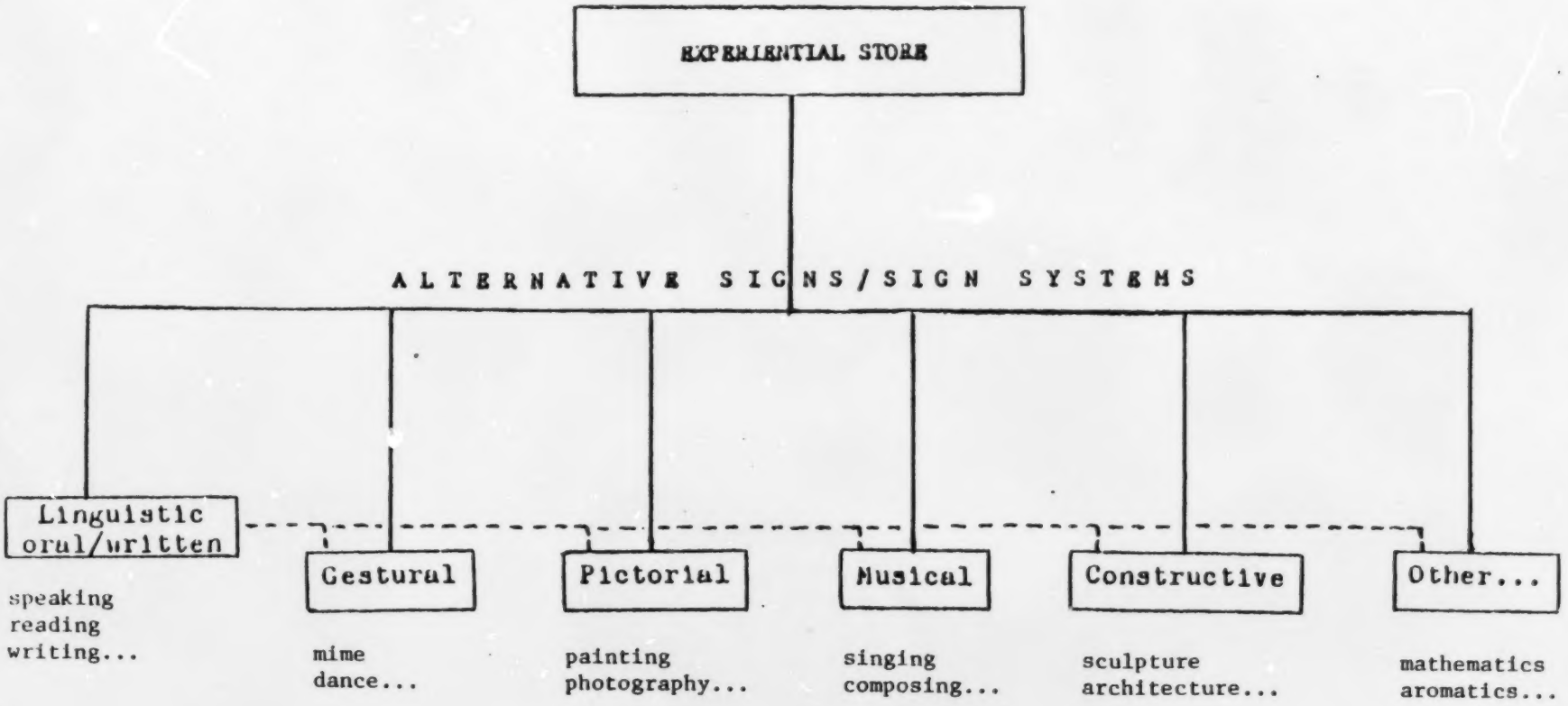

FIGURE 1: GENERAL MODEL FOR A SEMIOTICS-BASED CURRICULUM

Figure 1--A General Model for a Semiotic-Based Curriculum.

The model begins with an "Experiential Store" that is posited as existing within each human being. The idea here, consistent with Piaget (1971), Langer (1957), Halliday (1978), Schank (1973), and others, is that each human being carries a store of concepts, affects, and experiences, that is indeterminate, undifferentiated, and unsymbolized. We might think of the store of experiences as potential meanings to distinguish them from realized concepts. This pre-semiotic mental stuff is coded into one or more sign systems when we express ourselves.

The long horizontal bar marked "Alternative Signs/Sign Systems" represents the range of media theoretically at one's disposal in encoding various experiences. Obviously, some media are unsuited to the communication of some meanings--you'd be unlikely to express your anger about a cold hamburger through a painting or a mathematical formula--but options do exist.

The media alternatives, labeled as linguistic (oral and written) gestural (e.g., body language, mime, dance), pictorial (e.g., painting, photography), musical (instrumental or vocal), etc., are necessarily crude. In actual human experience many expressions of thought occur simultaneously in more than one medium. For example, much of everyday oral language is accompanied by facial and bodily gestures--as in a protest over a cold hamburger. Songwriters sometimes compose lyrics and melodies simultaneously. The second illustrative model will deal with such multi-media expressions of thought. The general model keeps the various media alternatives distinct because it could not bear the burden of visually depicting the innumerable possible combinations of multi-media expression, from simple talk-with-gestures to televised musical comedies.

Similarly, the general model does not distinguish with any degree of refinement between natural and artificial technologies in which (or through which) experiences are expressed. Note that only oral, gestural, and vocal-music expression require no artifacts. Other sign systems such as drawings, manuscripts, and sculptures involve relatively simple technologies like pencil, paper, and chisel. Beyond these simple technologies are the highly complex mechanical technologies like radio and television, which can act as transmitters for natural technologies and simple artificial ones. The third illustrative model will deal with some of the complexities involved in the use of sophisticated mechanical transmission devices.

The general model suggests the possibility of a taxonomy of sign systems without attempting to create such a taxonomy. I could find no thorough taxonomic model in the literature I reviewed; and I suspect that any adequate taxonomy would be too expansive for purposes of application to curriculum. For example, Krampen's ambitious categorization (reported in Harrison, 1969, pp. 71-72 included aromatics (use of aromas to express feeling, as in perfumery) and edectics (expression through cooking) while omitting still other defensible categories suggested elsewhere, like costumery and interior design. I will rest my case on this point with Eco (1976, p. 174), who says that a semiotics classification system need not be comprehensive in order to be useful for a particular purpose.

The general model depicts the various sign systems as basically parallel; but linguistic expression is elevated, and a dotted line connects it with all other categories. This is an assertion that <u>language is the primary organizer of human experience and is essential to virtually all school learning</u>. No matter what the subject area, language will play a major part in learning. True, specialists in areas like mathematics (Post, 1980) and visual media (Arnheim, 1974) have argued rightly for emphasis on the nonlinguistic aspects of

their disciplines. But as Carroll (1974, p. 156) notes, the various forms of iconic expression "are almost always accompanied by language and often require language to make them intelligible." Eco (1976, p. 174) agrees that "language is the most powerful semiotic device that man has invented," and Thomas (1980) cites Piaget's statement that "language is but one among. . . many aspects of the semiotic function, even though it is in most instances the most important." Clearly, language is used by musicians and visual artists in articulating their intentions and describing their techniques. And critical analysis of the elements in any nonlinguistic work involves language, as does description of the responses that the work evokes in us. (I decline to use the word "language" metaphorically here, as in the "language of music" or "body language," because such an approach blurs important distinctions among sign systems.)

Let me give a concrete classroom application and move on to the illustrative models. My example isn't purely hypothetical, since it reflects the kinds of classroom practices found in abundance in my study. Also, I've seen innumerable similar student products while reviewing student media festivals, producing a student media television series, and co-teaching a media course (Brossell, Suhor and Turbow, 1975; Suhor, 1971; Suid, 1971).

A class of eleventh grade students has been assigned John Steinbeck's Of Mice and Men. The novel has been read by the students and interiorized, perhaps willy-nilly, into their experiential store. They are asked to express their reactions to the novel in the medium of their choice. Many students produce a conventional book review, staying within the written language medium. The worst of these, as every bleary-eyed English teacher knows, will be literal plot summaries, while the best reviews will be rich in pragmatic insight. Bob and Harriet choose a different medium for their production--the pictorial. (See Figure 2.) Bob does a charcoal sketch of Curley's ranch, as if viewed from above, creating a literal

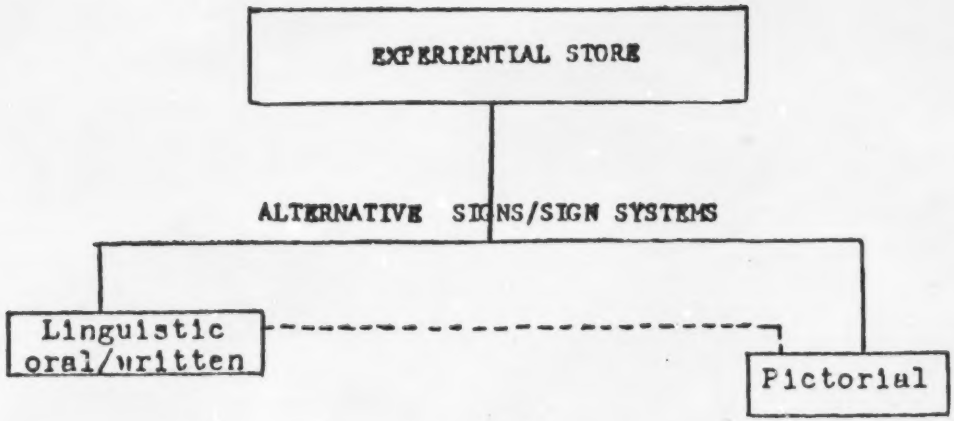

FIGURE 2: ILLUSTRATIVE MODEL 1-- PICTORIAL ALTERNATIVE MODEL

transmediation that renders as exact a depiction as possible of the bunkhouse, the barn, Crooks' shed, the nearby terrain, etc.

Harriet chooses to create a collage that includes pictures suggestive of characters in the novel. But the juxtaposition of the characters' pictures with other images--angels, apes, a vise, a fist, a cave--and the use of circular splotches of different colors constitute imaginative transmediation, as opposed to the literal rendering in the charcoal sketch.

Bob's pictorial representation becomes the basis for further receptive acts as the students process the images, comparing them to the images in their own experiential store. Then they react productively, in the linguistic mode, to the picture and to each other's comments. This continuing cycle of communication is, of course, what is commonly called class discussion. But there are special benefits derived from inclusion of nonlinguistic stimuli. Bob might explain his choice of charcoal rather than watercolor; describe problems of perspective and design encountered during the preparation of the sketch; show an earlier draft of the sketch; and tell of other interesting or problematical aspects of production. His comments--a verbal exercise in description and explanation--would probably be cast in medium-specific terms. His presentation could also lead to a sophisticated class discussion of point of view and tone, since these aspects are present both in the novel and the pictorial recreation.

Of course, the students' written products in connection with the assignment can and should be discussed as well. But there is an obvious power in the inclusion of nonlinguistic stimuli that stretch the receptive and productive capacities of the students in different ways (Saloman, 1974).

The students' reactions to Harriet's collage would follow the same overall

pattern as the discussion of Bob's drawing. But their oral responses would probably be more interpretive and evaluative at the outset, simply because it is futile (if not meaningless) to discuss the literal accuracy of a collage composed almost wholly of symbols. Bob's depiction of the layout of Curley's ranch can be incorrect, since fidelity to Steinbeck's print descriptions is at issue. Harriet's arrangement of symbols might reflect good or poor craftsmanship, insightful or capricious interpretation; but the class discussion is virtually certain to focus on design choices that relate to thematic concerns rather than to Harriet's matchup of visual symbols with Steinbeck's verbal correlates. In short, discussion is likely to be of a higher cognitive order, and more enjoyable as well.

In Illustrative Model II (See Figure 3), a group of five students has selected a multi-media expression of their response to Of Mice and Men. They write an original song, "The Ballad of Lenny and George," to be performed by one member of the group while the other four do a mime, using a few single props and a makeshift set.

Four media alternatives, then, are wrought to one in a transmediate performance: oral language, gesture, music, and construction. Hence, the overlapping of the linguistic designation with the others in the model. The students are highlighting the affective domain in their production, yet manipulating significant thematic concepts and making use of language every step of the way. Additionally, the planning stages will necessarily involve discussion, and perhaps a brief written scenario and a pictorial exercise in blocking. As in the class responses to the charcoal drawing and collage, students can discuss their emotional responses to the performance, its thematic and structural elements, and its technical aspects. Again, language is predominant and transmediation abounds in the verbal commentaries on the nonverbal performances.

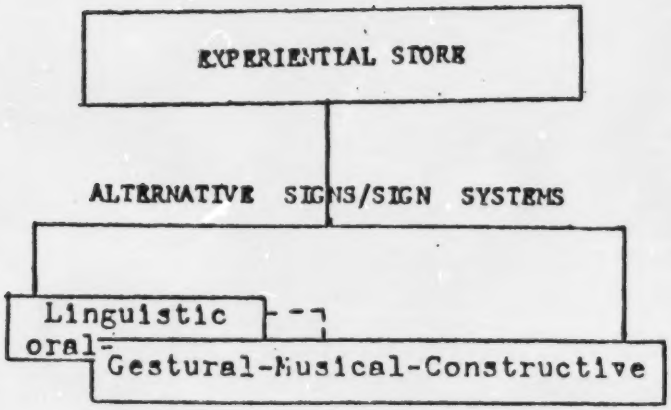

Figure 3: Illustrative Model II-- Multi-media Model

In Illustrative Model III (See Figure 4), a group of students has chosen to do a Super 8 silent film based on the theme of Of Mice and Men. Their title, "Images of Loneliness--Beyond Soledad," suggests the intention of finding visual analogies in their environment to express the feeling of loneliness permeating Steinbeck's novel.

This model depicts the use of mechanical media by a triangle, positioned like an inverted pyramid. This visual realization has several advantages. It suggests that the sign systems selected are further molded in particular ways by the nature of the mechanical medium. For example, in a filmed event--in contrast to a directly perceived event--the gestural, pictorial, and constructive elements do not exist freely in space. Their visual configurations are no longer dependent solely on the physical perspective of a mobile viewer. Rather, they are framed by the camera and circumscribed by the dimensions of the screen. Moreover, the aesthetic and technical choices of the director, the camera-holder, and the film editor give particular form and sequence to the elements. The mechanical medium, then, is a shaper of the message, selecting and narrowing according to its structural characteristics and the insight and technical expertise of the filmmaker.

The triangle can also be viewed as a metaphor for the filmmaker's imaginative resources. It can depict a "fanning out" of the filmmaker's artistic vision, which is imposed or "projected" on the categories of sign alternatives.

Coincidentally, the triangle resembles light projected on a screen, but the figure is not tailored exclusively to film technologies. For example, computer-programmed learning units in language arts such as those used in PLATO would be represented by a triangle connected to the "linguistic" rectangle. If the computerized material included graphics (as is often the case), the rectangle would combine linguistic/pictorial elements. The triangle for the tape recorder

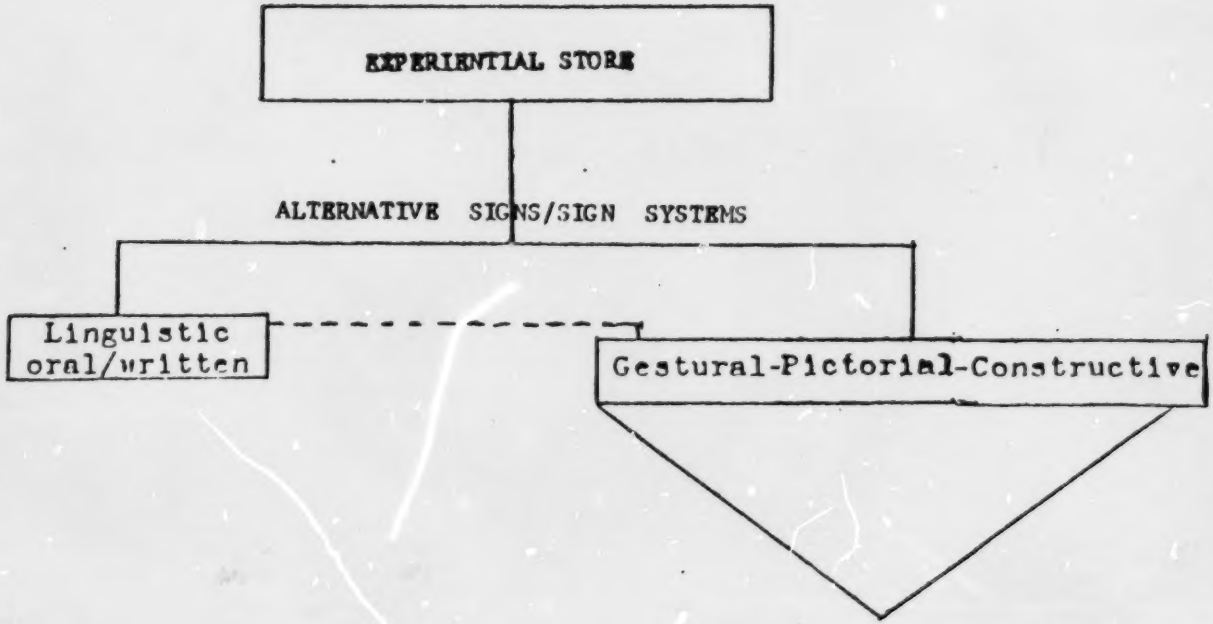

Figure 4: Illustrative Model III-- Mechanical Technology Model

would emanate from the linguistic and/or musical rectangles; and so on. Each triangle would represent a mechanical technology, with its own structure and rhetoric, its own limitations and potential for expression.

The richness of skills required in a semiotics-based language arts curriculum is evident. Saloman (1974), among others, has written about the range of mental skills required in multi-media reception and production. A well articulated semiotics-based program would necessarily be the opposite of the unstructured "frills" approach so feared by the back to basics advocates. The student's film interpretation of Steinbeck might involve, among other things, a wide range of linguistic skills (discussion, scripting); a strong sense of narrative; visual imagination and pictorial production (story board); constructive skills (building a set); knowledge about and physical manipulation of media hardware; and the manual dexterity and conceptual skills required in film editing.

A constellation of cognitive, aesthetic, and psychomotor skills are brought to the surface in the semiotic model. Granted, the models are a visual shorthand that do not reveal the particular skills involved in each medium or combination of media. Granted, many of the points raised in the model have been raised by advocates of aesthetic education and humanities programs (Suhor, 1981b). But the very range of semiotics and its potential for organizing our thinking about curriculum in new ways can, I believe, add structure and substance to our arguments for the things we value: the written word, the arts, interdisciplinary study, and the articulate exchange of ideas and feelings among students.

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